AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method for the heat treatment of fine-grained solids~~, in particular gypsum, in which~~ wherein the solids are heated to a temperature of ~~50~~ 150 to 1000°C in a fluidized bed reactor, ~~wherein~~ comprising introducing a first gas or gas mixture ~~is introduced~~ from below through a ~~preferably central~~ gas supply tube into a mixing chamber of the reactor located above an annular stationary fluidized bed~~, the gas supply tube being at least partly surrounded by a~~ the stationary annular fluidized bed ~~which is~~ being fluidized by supplying fluidizing gas, and ~~in that~~ wherein the gas velocities of the first gas or gas mixture as well as of the fluidizing gas ~~for the annular fluidized bed~~ are adjusted such that the particle Froude numbers in the gas supply tube are between 1 and 100, in the annular fluidized bed between 0.02 and 2 and in the mixing chamber between 0.3 and 30.

2. (previously presented) The method as claimed in claim 1, wherein the particle Froude number in the gas supply tube is between 1.15 and 20.

3. (previously presented) The method as claimed in claim 1 wherein the particle Froude number in the annular fluidized bed is between 0.115 and 1.15.

4. (currently amended) The method as claimed in claim 1, wherein ~~that~~ the particle Froude number in the mixing chamber is between 0.37 and 3.7.

5. (currently amended) The method as claimed in claim 1, wherein the bed height of the solids in the reactor is adjusted such that the annular fluidized bed extends beyond the upper orifice end of the gas supply tube, and ~~that~~ wherein solids are constantly introduced into

the first gas or gas mixture and entrained by the gas stream to the mixing chamber located above the orifice region of the gas supply tube.

6. (currently amended) The method as claimed in claim 1, wherein fine-grained solids~~, for example moist gypsum,~~ with a grain size of less than 2 mm~~, in particular less than 0.2 mm,~~ are supplied as ~~the~~ starting material.

7. (currently amended) The method as claimed in claim 1, wherein hot gas, which is generated in an upstream combustion chamber by burning supplied fuel~~, possibly~~ with an ~~the~~ admixture of a gas containing oxygen, is supplied to the reactor via the gas supply tube.

8. (cancelled)

9. (previously presented) The method as claimed in claim 1, wherein air is supplied to the reactor as fluidizing gas.

10. (previously presented) The method as claimed in claim 1, wherein the pressure in the reactor is between 0.8 and 10 bar.

11. (currently amended) The method as claimed in[[,]] claim 1, wherein, before the heat treatment in the reactor, the solids are suspended, dried and ~~and/or~~ pre-heated in at least one pre-heating stage[[,]] comprising a heat exchanger and a downstream separator.

12. (currently amended) The method as claimed in[[,]] claim 1, wherein, after the heat treatment in the reactor, the ~~product~~ solids from the annular fluidized bed of the reactor ~~and/or a separator provided downstream of the reactor is~~ are at least partly supplied to a cooling system[[,]] which comprises ~~in particular~~ an arrangement of a number of cooling stages connected one after the other.

13. (currently amended) The method as claimed in claim 12, wherein the ~~product forms~~ solids form in a cooling stage ~~(19)~~ at least one fluidized bed, in which it is cooled by a

fluidizing gas~~, in particular air, and/or~~ or a cooling coil ~~(24, 31)~~, formed in the fluidized bed, with cooling medium~~, in particular water~~.

14. (cancelled)

15. (currently amended) A plant for the heat treatment of fine-grained solids~~, in particular for performing a method as claimed in claim 1~~ comprising a reactor constituting a fluidized bed reactor for the heat treatment, wherein the reactor has a gas supply system which is formed such that gas flowing through the gas supply system entrains solids from a stationary annular fluidized bed~~, which at least partly surrounds the gas supply system,~~ into the mixing chamber, the plant further comprising a separator downstream of the reactor and a solids conduit leading from the separator to the annular fluidized bed of the reactor.

16. (currently amended) The plant as claimed in claim 15, wherein the gas supply system has a gas supply tube extending upwards ~~substantially vertically~~ from the lower region of the reactor into the mixing chamber of the reactor~~, the gas supply tube being surrounded by a chamber which extends at least partly around the gas supply tube and in which a stationary annular fluidized bed is formed~~.

17. (currently amended) The plant as claimed in claim 15 wherein the gas supply system has a ~~the~~ gas supply tube ~~is~~ arranged approximately centrally with reference to the cross-sectional area of the reactor.

18. (cancelled)

19. (currently amended) The plant as claimed in claim 15, wherein a solids conduit leading from the annular stationary fluidized bed of the reactor to the cooling system is provided.

20. (currently amended) The plant as claimed in[[,]] claim 15, wherein provided in ~~the annular~~ a chamber of the reactor is a gas distributor which divides the chamber into an

upper annular fluidized bed and a lower gas distributor, and ~~that~~ wherein the gas distributor is connected to a supply conduit for fluidizing gas.

21. (currently amended) The plant as claimed in[[,]] claim 15, wherein provided upstream of the reactor is a combustion chamber with supply conduits for fuel, oxygen ~~and/or~~ or heated gas, the exhaust gas of which is passed into ~~the~~ a gas supply tube.

22. (currently amended) The plant as claimed in[[,]] claim 15, wherein provided downstream of the reactor is a cooling system[[,]] comprising direct ~~and/or~~ and indirect cooling stages~~, in particular cooling cyclones and/or fluidized bed coolers~~.

23. (new) The method of claim 1, wherein the gas supply tube is central.

24. (new) The plant as claimed in claim 15, wherein the gas supply tube extends upwards vertically.

25. (new) The plant as claimed in claim 15, wherein the separator has a solids conduit leading to a cooling system.